REMARKS

Rejections under 35 USC §103(a)

Claim 5 was rejected under 35 USC §103(a) as being obvious over WO 98/10111 (English equivalent U.S. Patent No. 6,136,101 to Sugawara et al.).

Claim 5, as amended, recites "heating said Fe-based alloy material setting an average rate H_R of heating **to a point A_1 in an Fe-C based equilibrium diagram** to be in a range of $0.5^{\circ}C/sec \leq H_R \leq 6.0^{\circ}C$ /sec, and setting a maximum temperature gradient T_G of the inside of the Fe-based alloy material per unit distance to be at $T_G \leq 7^{\circ}C/mm$."

Sugawara et al describes about the heating rate Rh as follows:

> Then, each of the Fe-based casting materials was subject to an induction heating **with the heating rate Rh between the eutectoid temperature (770°C.) which was a temperature providing the minimum solid-solution amount h and the eutectic temperature (1160°C.) which was a temperature providing the maximum solid-solution amount g being varied**. When the temperature of each Fe-based casting material reached 1200°C. (a temperature lower than the solid phase line) beyond the eutectic temperature at the above-described heating rate, each Fe-based casting material was water-cooled, whereby the metal texture thereof was fixed.

(Col. 14, lines 39-50). Thus, EXAMPLE II and TABLE 4, referred to by the Examiner, shows the heating rate Rh between the eutectoid temperature and the eutectic temperature.

In contrast, according to claim 5, Fe-based alloy material is heated setting an average rate H_R of heating **to a point A_1 in an Fe-C based equilibrium diagram** to be in a range of

$0.5^{\circ}C/sec \leq H_R \leq 6.0^{\circ}C$ /sec, and setting a maximum temperature gradient T_G of the inside of the Fe-based alloy material per unit distance to be at $T_G \leq 7^{\circ}C/mm$.

Thus, Sugawara does not teach or suggest "heating said Fe-based alloy material setting an average rate H_R of heating **to a point A_1 in an Fe-C based equilibrium diagram** to be in a range of $0.5^{\circ}C/sec \leq H_R \leq 6.0^{\circ}C$ /sec, and setting a maximum temperature gradient T_G of the inside of the Fe-based alloy material per unit distance to be at $T_G \leq 7^{\circ}C/mm$."

For at least these reasons, claim 5, as amended, patentably distinguish over Sugawara.

Claim 6 was rejected under 35 USC §103(a) as being obvious over reference as applied to claim 5 above, and further in view of acknowledged piror art admission.

Claim 6 depends from claim 5. Therefore, claim 6 also patentably distinguishes over Sugawara for at least the same reasons discussed above.

Acknowledged prior art admission has been cited for allegedly disclosing use of ultrasonic velocity to inspect cast metal. Such disclosure, however, does not remedy the deficiencies of Sugawara discussed above.

For at least these reasons, claim 6 patentably distinguishes over Sugawara and acknowledged prior art admission.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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